

of coloured sections and two folding maps. Some of the photographic plates, such as that of the "block-structure" in porphyrite, facing p. 106, are of unusual beauty.

G. A. J. C.

OUR BOOK SHELF.

A. Koelliker's *Handbuch der Gewebelehre des Menschen*. 6te Auflage. Drittes Band. Von Victor v. Ebner. Pp. 1020; 633 illustrations. (Leipzig: W. Engelmann, 1902.) Price 18s. net.

THE conclusion of the sixth edition of Koelliker's "Histology" merits more than a passing remark. The first appearance of this well-known handbook about the middle of the last century formed an epoch in the science of which it treats (which it may almost be said to have created), and ever since it has held the foremost rank in works dealing with the subject. But it is now more than thirty years ago that the fifth edition was published, and progress has been rapid in the interval.

The first two volumes of the present edition were edited by the original author, and no work that he has done has been better done than this. But the weight of years must eventually tell, even if one is Koelliker, and the task of editing the third volume was handed over by him to Prof. v. Ebner. A first part of this volume, dealing with the digestive, respiratory, and urinary organs has appeared, and has already been noticed in NATURE; the last part of the work, embracing the structure of the generative organs, the vascular system and the organs of special sense, and comprising also an index of subjects and authors for the whole book, is now in the hands of histologists. Prof. Koelliker's selection of an editor for his great work is amply justified; a better successor to himself could hardly have been found than the eminent Vienna histologist, who has, moreover, been ably assisted by Dr. Joseph Schaffer and Dr. Hans Rabl. It is to all intents and purposes a new book which has made its appearance. Hardly a page but has been rewritten, and of the 633 illustrations, 533 are entirely new—for the most part from original preparations. Nevertheless, the general style of the preceding volumes is singularly well carried out in this one, so that it is difficult at first to recognise that the work is by another hand. Too much praise cannot be given to the bibliographical notices, which are far more complete than are to be found in any other work on histology.

The whole book is a storehouse of information based on personal observations, and must long remain the standard work of reference on the subject.

The octogenarian master, whose own scientific activity is by no means exhausted, must be well content to know that his work has been brought to so brilliant a completion, and in presenting to him our respectful congratulations, we may be permitted to express the desire that he will still continue for many years to enjoy the satisfaction of witnessing the success of his life-long labours.

E. A. S.

Building Superintendence. New edition, revised and rewritten. By T. M. Clark. Pp. 306. (New York: The Macmillan Company; London: Macmillan and Co., Ltd., 1903.) Price 12s. 6d. net.

THIS is a book which appears to have had an extended circulation in the United States, and, although it contains a good deal of practical information, a large amount would only apply to construction methods on the North American Continent. It is primarily addressed to the young architect, and gives him hints as to the selection of good materials and as to the direction of building operations generally. A knowledge of building construction is therefore assumed,

and the book is intended to supplement that knowledge by the practical application to existing buildings.

The subject is divided into three main heads, namely, stone buildings, wooden buildings, and steel-framed buildings, and in each case a typical building is described from the foundations upwards, showing the successive stages of construction and general direction for the judging of the quality of materials. The term "superintendent," which occurs so often, is presumably the American equivalent for the English clerk of works.

The English student should beware of information which may apply in the States, but is not correct as applied to England; for instance, on p. 5 we are told that five courses of bricks commonly equal one foot in height, whereas, as a matter of fact, four courses in England usually equal one foot. Many of the terms and names will also be quite unfamiliar to him.

Chapter i., dealing with stone buildings, takes up the construction of a stone church intended to be erected on elevated ground. This occupies more than 100 pages, and deals with the preliminary staking out of its various parts—foundations, damp in cellars, the making of concrete and mortar, defects common to various kinds of stone, walling, flooring, roofing beams, and plastering. The information is sometimes effected by means of question and answer between the architect and foreman in the manner made familiar in the treatises of Viollet le Duc.

Chapter ii. deals with wooden dwelling-houses, their location and aspect, drainage of site, employment of contractors, the framing of the timber (uprights and sills), chimneys, electric wiring and fitting, roof shingles, plastering, plumbing fittings, doors, windows, stairs and their arrangement and defects, drainage and water supply, and painting. Chapter iii., dealing with the writing of specifications, can be passed over, as essential differences exist between English and American practice. Chapter iv. deals with contracts, and the author rightly dwells on the importance of these, especially with regard to the necessity for protecting the building owner.

Chapter v. deals with the construction of a steel-frame office building, eleven storeys high, on a corner city site 25 feet by 100 feet, in which economy of space has to be carefully studied. This is probably one of the most interesting chapters in the book, and its construction is dealt with in a progressive way, in the same manner as in the stone and wood buildings.

The plan, question of fire escapes, foundation, steel framework, vaults, floors (fire-resisting), elevators, are dealt with in turn. As will be seen, the book is arranged on a sensible and convenient plan, and if it could be written to be suitable for English readers, it would be of greater benefit. As it is, however, it contains a great deal of excellent advice founded upon practical experience, and no architect could read it through without having his wits sharpened for discovering defects in workmanship at the periodical visits which he pays to buildings in course of erection from his designs.

A Key to the Time Allusions in the Divine Comedy of Dante Alighieri. By Gustave Pradeau. Pp. 32. (London: Methuen and Co., 1902.)

THE author, having found that different editions of the great poem of Dante assigned different durations of time for the action supposed to be occupied by it, set himself to investigate the matter by a comparison of all the time allusions until the poet ascends from over Jerusalem to the *primum mobile*. He ingeniously illustrates his argument by a diagram or "dial" in the circumference of which are the signs of the zodiac, whilst in the centre are four points representing respec-

tively Jerusalem, Purgatory, the Ganges, and Morocco. Dante imagined that, with respect to Jerusalem, the Ganges was the extreme east and Morocco the extreme west. The four important divisions of the day, *mezzodi* or midday, *sera* or evening, *mezzanotte* or midnight, and *mattino* or morning, are represented by lines towards the circumference. At the beginning of the poem Gerusalemme must be placed at the top of the circle, with Mattino over it. Now looking southwards, holding the dial straight before us, it will be found that the sun on the dial follows the same course as the real sun. The lines in the *Inferno*, *Purgatorio*, and *Paradiso* which contain the time allusions are given in Italian and in Longfellow's English translation, and the author finds that the whole duration from the beginning of the poem to the final morning in *Purgatorio* is seven and a half days, i.e. seven days from the entrance with Vergil into Hell.

The conceptions of great poets like Dante and Milton must ever be of interest, though we cannot, of course, expect them to be in agreement with modern astronomy. The latter, though constructing the universe according to Ptolemy, yet, living after Copernicus, and being personally acquainted with Galileo, evidently had misgivings with regard to the truth of that system. None such troubled the mind of Dante; to him the earth was the centre of the universe, both in appearance and in reality. But M. Pradeau presents a scheme concerning his views as bearing upon the progress of time in the "*Divina Commedia*" which is both ingenious and consistent with itself.

W. T. L.

A School Geometry. Part iii. By H. S. Hall, M.A., and F. H. Stevens, M.A. Pp. vii+137 to 210. (London: Macmillan and Co., Ltd., 1903.) Price 1s.

IN this volume we have a further instalment of the new text-book of elementary geometry which the authors have in preparation, a school geometry based on the recommendations of the Mathematical Association and the recently adopted report of the Cambridge Syndicate.

The present contribution deals with the geometry of the circle, and contains the substance of Euclid, book iii., 1-34, and a portion of book iv. The authors have omitted some of Euclid's propositions, and have not adhered strictly to Euclid's sequence, but the Euclidean form of proof has been retained.

The conception of a "limit" is appropriately introduced in explaining the nature of tangency, and in establishing some of the propositions.

The exercises, which follow the propositions at short intervals, are partly deductive and partly graphical, the latter requiring the use of compasses and scale, the numerical answers being collected at the end of the volume. The examples are simple and well graduated.

We consider that problem 23 would be better omitted, together with the exercises based thereon. It is of no practical value, and should be consigned to the Euclidean relics. Every draughtsman knows that a line can be drawn with greater accuracy to touch two given circles than to pass through two given points, and if the points of contact are wanted, they can be determined subsequently by drawing perpendiculars from the centres of the circles.

The circumference and area of a circle are briefly dealt with on p. 198. The experimental determination and verification of these quantities might with advantage have been more fully gone into. The book concludes with some propositions on circles and triangles, including a demonstration of the property of the nine-points circle.

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LETTERS TO THE EDITOR.

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American Botanic Laboratory in Jamaica.

THE Director of Kew presents his compliments to the Editor of NATURE and requests the favour of his publishing the enclosed letter.

Kew, August 23.

Sir William Thiselton-Dyer,
Royal Botanic Gardens,
Kew,
Surrey, England.

My dear Sir,

The Government of Jamaica has decided to relinquish its use of the buildings at Cinchona. The experimental and botanical plantations are, however, to be maintained as before. The Surveyor-General of Jamaica offered under public advertisement on June 15 the group of buildings known as Bellevue and some land for rental. I have personally accepted this rental for the purpose of saving the station for scientific purposes, and with the plan of establishing there, if possible, the long desired botanical laboratory in the American tropics. At my request, Dr. MacDougal has recently visited Jamaica to arrange details of the lease, and reports that the buildings and their furnishings are already comfortable and well adapted for the use of investigators.

Dr. MacDougal and I decided to take these steps after consultation and correspondence with Prof. Underwood, who spent the early part of the year in Jamaica in the study of ferns, and who is now in Europe; with Dr. Duncan S. Johnson, who has recently returned from Jamaica, where he has been collecting material for embryological studies; with Mr. Wm. R. Maxon, who was with Prof. Underwood there during the spring; and with Prof. Earle, who spent last November in Jamaica in mycological investigations. Dr. MacDougal was already familiar with the locality from his visit there with Prof. Campbell in 1897, and we had discussed the topic with the Hon. Wm. Fawcett, director of the public gardens and plantations of Jamaica, while he was in New York last autumn during the meeting of the Plant Breeding Conference. The aid and cooperation of all who regard the securing of Cinchona as a proper and desirable act will be needed to maintain such a laboratory, and to this end I ask that you write me your opinions on this subject, and to indicate what aid you can render, and whether either you or your students would wish to make use of the station during the next year, and if so, for what length of time approximately.

I may say that the Jamaican Government is heartily in sympathy with the enterprise, and will cooperate to a very important extent, furnishing facilities for growing plants under the widely different climatic conditions offered by the gardens at Cinchona, Hope, and Castleton, the use of the large botanical laboratory and herbarium at Hope, and the use of visitors' tables in the laboratory at Hope.

As regards Cinchona, I quote the following from Prof. Underwood's account of his work in Jamaica from the July issue of the *Journal of the New York Botanical Garden*:—

"Not the least important of the results of the expedition was a possible solution of the problem of a suitable location for a tropical laboratory, which has long been under consideration by American botanists. At the time of the visit of the committee appointed some years ago to investigate the subject, the plant at Cinchona was occupied by the Government botanist, and was consequently out of the question. A one-story six-room house, three or four low buildings suitable for laboratory work, with two green-houses of sufficient capacity to conduct experimental work under glass, could be had of the Jamaica Government at a nominal rent. Cinchona is nearly a mile above the sea, with a delightful climate (the extremes of temperature for the past twenty years being 45° F. and 79° F.), a delightful outlook, and as closely accessible to virgin forest as could be obtained. Within three miles, nearly on a level, is